

Application No. 10/699,764

MXIC 1520-1
(P900385US)

Amendments to the Claims

In the claims:

This listing of claims will replace all prior versions and listings of claims in the application:

- 1 1. (currently amended) An integrated circuit, comprising:
2 an input port by which data is received from a source external to the integrated circuit;
3 a configurable logic array having a programmable configuration defined by configuration
4 data stored in electrically programmable configuration points within the configurable logic array;
5 memory adapted to store storing instructions for a mission function for the integrated
6 circuit, ~~to store~~ storing instructions for a configuration load function used to receive
7 configuration data via said input port, and ~~to store~~ storing instructions for a configuration
8 function used to transfer the configuration data to the programmable configuration points within
9 the configurable logic array; and
10 a processor coupled to the memory which fetches and executes said instructions from the
11 memory.
- 1 2. (original) The integrated circuit of claim 1, wherein said memory comprises a nonvolatile
2 store.
- 1 3. (original) The integrated circuit of claim 1, wherein said memory comprises a floating gate
2 memory store.
- 1 4. (original) The integrated circuit of claim 1, wherein said memory comprises a read-only
2 memory store.
- 1 5. (original) The integrated circuit of claim 1, wherein said memory comprises a first nonvolatile
2 store for the configuration function, and a second store for the mission function.
- 1 6. (original) The integrated circuit of claim 1, wherein said memory comprises a first
2 programmable, nonvolatile store for the configuration load function, and a second store for the
3 mission function.

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1 7. (original) The integrated circuit of claim 1, including a watchdog timer coupled to the
2 processor, and wherein the configuration function includes using the watchdog timer to generate
3 a reset in response to errors, and upon the reset, re-executing the configuration load function and
4 the configuration function.

1 8. (original) The integrated circuit of claim 1, including a watchdog timer coupled to the
2 processor, and wherein the configuration load function includes using the watchdog timer to
3 generate a reset in response to errors, and upon the reset, re-executing the configuration load
4 function.

1 9. (original) The integrated circuit of claim 1, wherein the configuration load function includes
2 receiving encrypted configuration data via an input port on the integrated circuit, and decrypting
3 the configuration data.

1 10. (original) The integrated circuit of claim 1, wherein the configuration load function includes
2 receiving compressed configuration data via an input port on the integrated circuit, and
3 decompressing the configuration data.

1 11. (original) The integrated circuit of claim 1, wherein the electrically programmable
2 configuration points comprise floating gate memory cells.

1 12. (original) The integrated circuit of claim 1, wherein the electrically programmable
2 configuration points comprise nonvolatile, charge programmable memory cells.

1 13. (original) The integrated circuit of claim 1, wherein the electrically programmable
2 configuration points comprise nonvolatile, programmable memory cells.

1 14. (original) The integrated circuit of claim 1, including:
2 an interface between the processor and the configurable logic array supporting said
3 configuration load function.

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1 15. (original) The integrated circuit of claim 1, wherein said memory stores instructions for an
2 in-circuit programming function to write or modify instructions for the configuration load
3 function.

1 16. (original) The integrated circuit of claim 1, wherein said memory includes a protected
2 memory array storing instructions for a first configuration load function, and a second memory
3 array storing instructions for a second configuration load function, the first memory array being
4 protected from alteration by an in-circuit programming function and the second memory array
5 being accessible to be written or modified by the in-circuit programming function.

1 17. (original) The integrated circuit of claim 1, wherein said processor comprises a configurable
2 logic array configured to execute said instructions.

1 18. (original) A method for providing for error recovery during loading of configuration data to
2 an integrated circuit including a processor, a configurable logic array having configuration points
3 to store the configuration data, and memory storing instructions executable by the processor
4 including instructions for a configuration load function to load configuration data from a source
5 external to the integrated circuit, comprising:
6 monitoring the loading of configuration data using the configuration load function in
7 order to detect a delay in transmission of configuration data from a remote host; and
8 restarting the configuration load function if the delay exceeds a timeout value.

1 19. (original) The method of claim 18, wherein the step of monitoring is performed by using a
2 watchdog timer on the integrated circuit and coupled to the processor.

1 20. (original) A method for configuring an integrated circuit including a processor, a
2 configurable logic array having a programmable configuration defined by configuration data
3 stored in electrically programmable configuration points within the configurable logic array, and
4 memory storing instructions executable by the processor, the method comprising:
5 storing instructions in a first memory array of said memory for a mission function for the
6 integrated circuit;

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7 storing instructions in a second memory array of said memory for configuration load
8 function used to receive configuration data from a source external to the integrated circuit; and
9 storing instructions in a third memory array of said memory for a configuration function
10 used to transfer the configuration data to the programmable configuration points within the
11 configurable logic array.

1 21. (original) The method of claim 20, wherein said memory comprises a nonvolatile store.

1 22. (original) The method of claim 20, wherein said memory comprises a floating gate memory
2 store.

1 23. (original) The method of claim 20, wherein said memory comprises a read-only memory
2 store.

1 24. (original) The method of claim 20, wherein said second array of said memory comprises a
2 first nonvolatile store for the configuration function, and first array of said memory comprises a
3 different second store different than the first nonvolatile store for the mission function.

1 25. (original) The method of claim 20, wherein said second array of said memory comprises a
2 first programmable, nonvolatile store for the configuration function, and first array of said
3 memory comprises a different second store different than the first nonvolatile store for the
4 mission function.

1 26 (original) The method of claim 20, wherein the configuration load function includes receiving
2 encrypted configuration data via an input port on the integrated circuit, and decrypting the
3 configuration data.

1 27. (original) The method of claim 20, wherein the configuration load function includes
2 receiving compressed configuration data via an input port on the integrated circuit, and
3 decompressing the configuration data.

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1 28. (original) The method of claim 20, wherein the electrically programmable configuration
2 points comprise floating gate memory cells.

1 29. (original) The method of claim 20, wherein the electrically programmable configuration
2 points comprise nonvolatile, charge programmable memory cells.

1 30. (original) The method of claim 20, wherein the electrically programmable configuration
2 points comprise nonvolatile, programmable memory cells.

1 31. (original) The method of claim 20, including:
2 monitoring the loading of configuration data using the configuration load function in
3 order to detect a delay in transmission of configuration data from a remote host; and
4 restarting the configuration load function if the delay exceeds a timeout value.

1 32. (original) The method of claim 20, including:
2 monitoring the loading of configuration data using a watchdog timer on the integrated
3 circuit and coupled to the processor during the configuration load function in order to detect a
4 delay in transmission of configuration data from a remote host; and
5 restarting the configuration load function if the delay exceeds a timeout value.

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